AMENDMENTS TO THE CLAIMS

Kindly cancel claims 16 and 20. Kindly add new claims 21-22 and amend the remaining claims as follows.

CLAIMS

Claim 1. (currently amended): A cell sorter comprising:

[~~at least one~~] a stepping precision pump coupled to a fluid inlet port, [~~whereby~~] said pump causing fluid containing desired cells [~~is caused~~] to enter said inlet port;

a cell detection system fluidly coupled to said inlet port, said cell detection system determining whether a particular cell is a desired cell;

a sorting gate with at least two states fluidly coupled to said cell detection system, said sorting gate allowing said desired cell to exit a cell collection port and allowing waste to exit a waste port;

a control unit connected to said pump, said cell detection system and said sorting gate, said control unit processing information from said cell detection system and causing said pump to stop and causing said sorting gate to select said cell collection port when a desired cell is in a proper position to exit said cell collection port.

Claim 2. (original): The cell sorter of claim 1 wherein said sorting gate is magnetostrictive.

Claim 3. (original): The cell sorter of claim 1 wherein said cell detection system is optical.

Claim 4. (original): The cell sorter of claim 3 wherein said cell detection system uses fluorescence.

Claim 5. (original): The cell sorter of claim 3 wherein said cell detection system uses scattered light.

Claim 6. (original): The cell sorter of claim 3 wherein said cell detection system uses both fluorescence and scattered light.

Claim 7. (original): The cell sorter of claim 6 wherein a fluorescence and scattered light determination is made simultaneously.

Claim 8. (currently amended): A cell sorter system for sorting desired cells from undesired matter comprising:

a stepping precision pump [~~for~~] coupled to a capillary;

an optical detection system in proximity to said capillary; and

a magnetostrictive gate switching between a cell exit port and a waste port in said capillary;

said pump pumping cell-containing fluid into [~~a~~] the capillary and controlling positions of [~~said~~] cells in said capillary by stopping flow when [~~; an~~] said optical detection system [~~for determining when~~] determines a desired cell is in a predetermined position in said capillary;

[~~a~~] said magnetostrictive gate [~~controlled by a magnetic field that causes~~] switching flow from said waste port to said cell exit port when said pump stops allowing [~~a~~] the desired cell to pass through [~~a~~] said cell exit port by pulsing the pump to move said cell through said cell exit port [~~and waste material to pass through a waste port;~~].

[~~a vacuum system to cause said desired cell to exit said cell exit port.~~]

Claim 9. (currently amended): The cell sorter system of claim 8 further comprising a means for applying [~~said~~] a magnetic field to said magnetostrictive gate, whereby said magnetostrictive gate switches from [~~a first exit port to a second exit port~~] said waste port to said cell exit port.

Claim 10. (currently amended): The cell sorter system of claim 8 wherein said optical detection system uses fluorescence.

Claim 11. (currently amended): The cell sorter system of claim 8 wherein said optical detection system uses scattered light.

Claim 12. (currently amended): The cell sorter system of claim 8 wherein said optical detection system uses both fluorescence and scattered light simultaneously.

Claim 13. (currently amended): The cell sorter system of claim 8 wherein said optical detection system [~~uses~~] includes a photomultiplier.

Claim 14. (currently amended): The cell sorter system of claim 8 wherein said optical system [~~uses~~] includes a diode array.

Claim 15. (currently amended): A method for sorting cells comprising:

causing fluid containing cells to enter an inlet port of a capillary by pumping said fluid with a stepping precision pump;

causing said fluid to pass through an optical detection region where said fluid is exposed to light of at least one predetermined wavelength, [~~whereby~~] wherein scattered light or fluorescence from said cells[~~, or fluorescence from said cells,~~] is used to choose [~~desired cells~~] a particular desired cell;

stopping said stepping precision pump when said particular desired cell is in a predetermined position in proximity to a cell exit port;

[~~causing a magnetostrictive gate to sort said cells causing desired cells to pass through a cell exit gate depending on a decision made from said light, whereby selected cells exit by said cell exit gate~~];

applying a magnetic field to a magnetostrictive gate causing said magnetostrictive gate to open said cell exit port;

pulsing said stepping precision pump to cause said particular desired cell to pass through said cell exit port;

[~~causing said selected cells to exit said cell exit gate.~~]

removing said magnetic field from said magnetostrictive gate causing said magnetostrictive gate to close said cell exit port;

drawing said particular desired cell from said exit port.

Claim 16. (cancelled).

Claim 17. (original): The method of claim 15 wherein said magnetostrictive gate contains a magnetostrictive rod.

Claim 18. (original): The method of claim 17 wherein said magnetostrictive rod changes length in an applied magnetic field.

Claim 19. (currently amended): The method of claim 15 wherein said [~~optical system contains optical fibers~~] light is directed into said optical detection region by fiber optics.

Claim 20. (cancelled).

Claim 21. (new): The cell sorter of claim 1 further comprising said control unit pulsing said pump to pump an amount of fluid sufficient to move said selected cell into said cell collection port after said sorting gate has selected said cell collection port.

Claim 22. (new) The method of claim 15 wherein the step of drawing said particular desired cell from said exit port is performed using a vacuum.